

REMARKS

Reconsideration of the outstanding rejections is respectfully requested for the reasons set forth below.

Claim Rejections - Under 35 U.S.C. §103

Claims 1-2, 7-8, 10-11 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Lombard et al. in view of WO 97/12709. Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lombard et al. in view of WO 97/12709 and further in view of Carden et al. Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lombard et al. in view of WO 97/12709 and further in view of Carden et al. and Klotzbicher et al. Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lombard et al. in view of WO 97/12709 and further in view of Carden et al. and Collot et al. Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lombard et al. in view of WO 97/12709 and further in view of Clark. Claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lombard et al. in view of WO 97/12709 and further in view of Wang. Claim 12 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lombard et al. in view of WO 97/12709 and further in view of Peleschka et al. Applicant submits that claim 1 as amended to incorporate all elements of claim 14 overcomes the rejections set forth above.

Claim 14 was rejected under 35 U.S.C. §103 as being unpatentable over Lombard in view of WO97/12709, Aoyama and Fleming. Claim 14 is now canceled; however, since the scope of claim 1 as amended is identical to that of claim 14, Applicant responds to the rejection based on claim 1 as amended.

The Office Action admits that Lombard in view of WO97/12709 fails to teach the use of a time control unit for starting and stopping the stirring unit in terms of the pouring of molten metal and crystalline nuclei; however, the Office Action relies on Aoyama for that aspect. Applicant traverses.


First, the Aoyama reference fails to teach anything about applying an electromagnetic field. The Aoyama reference teaches only applying a motion to the melted metal via a mechanical or physical means. The Office Action takes it for granted that the timing of applying a motion is applicable to the timing of applying an electromagnetic field; however, Applicant submits that this is clear evidence of using the Application as a blueprint for a hindsight reconstruction.

Second, the timing taught by the Aoyama reference is different from the required timing of applying an electromagnetic field in the claims of the present Application. Claim 1 as amended requires "an electromagnetic field is applied to the second sleeve from prior to pouring the molten metal in the second sleeve and is stopped when crystalline nuclei are formed in the molten metal." On the other hand, the Aoyama reference, particularly at column 4, lines 39-49, clearly indicates that a molten metal is first loaded and the loaded metal is cooled and "then" a motion is applied to the cooled melted metal "when" at least a part of each melted metal reaches a temperature "below" the liquidus temperature in the course of cooling of the melted metal. Further, Flemings does not cure the defects of Lombard, WO97/12709 and Aoyama.

Therefore, in terms of timing of applying an outside force to a vessel (let alone the fact that the Aoyama reference fails to teach applying an electromagnetic field at all), the Aoyama reference fails to teach "an electromagnetic field is applied to the second sleeve from prior to pouring the molten metal in the second sleeve and is stopped when crystalline nuclei are formed in the molten metal." Thus, for the reasons set forth above, Applicant submits that the cited references individually or together fail to teach or suggest the present claims (1-13) as amended, and therefore, the rejection should be withdrawn.

In view of the foregoing, it is submitted that the present application is now in condition for allowance. Reconsideration and allowance of the Application are requested. The Director is authorized to charge any fees or overpayment to Deposit Account No. 02-2135.

Respectfully submitted,

By 
Hyunkweon Ryu
Attorney for Applicant
Registration No. 58,283
ROTHWELL, FIGG, ERNST & MANBECK, P.C.
Suite 800, 1425 K Street, N.W.
Washington, D.C. 20005
Telephone: (202)783-6040
Facsimile: (202)783-6031

1349673.1